PSYCHOMETRIC VALIDATION AND URDU TRANSLATION OF CLINICAL ANGER SCALE

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ABSTRACT

The study aimed to translate the Clinical Anger Scale (CAS) into Urdu, assess language equivalence through cross-language validity, and confirm the factor structure of the Urdu version of CAS. The study was divided into three phases. The first phase focused on translating the CAS into Urdu. In the second phase, cross-language validation was conducted. The third phase involved establishing the reliability and factor structure of the CAS. A self-report questionnaire was developed to measure psychological symptoms related to clinical anger, consisting of 21 sets of statements with four options each. 700 participants aged 13 to 19 were selected, with 100 participants from each age group. Each age group included 50 boys and 50 girls, resulting in an overall sample of 350 boys and 350 girls. The results indicated test-retest reliability across all groups (English-Urdu, Urdu-English, Urdu-Urdu, and English-English), with correlation coefficients ranging from .75 to .82. The Urdu-Urdu group showed a correlation of r = .75 (p < .01), suggesting high temporal consistency. These correlations suggest excellent levels of test-retest reliability, confirming temporal validity and consistency of scores across the sample. Fit indices for the clinical anger scale were assessed, and the initial model showed excellent absolute fit (χ²(168) = 425.12, p < .05). Relative fit indices improved after modifications, resulting in GFI, CFI, and NNFI values of .97, .94, and .93 respectively, and RMSEA and SRMR values of .06 and .05 respectively, indicating excellent model fit. Reliability coefficients, including composite reliability and Cronbach's alpha, ranged from .88 to .87, confirming the psychometrically sound and reliable nature of the scale. The study provides robust evidence supporting the language equivalence and theoretical similarity of the original and translated versions of the CAS.

INTRODUCTION

Human emotions are essential to our continued existence, but they can also do us damage. Emotional trouble contributes immensely to the burden of human distress. Anger is one of the most essential emotions. Anger is usual though sometimes unwanted or unreasonable emotion that everybody experiences time to time (Richardaen & Haluwell, 2011). Stories, myths, and spiritual beliefs reveal the significant and influential role that anger has played in human life since the beginning of recorded history. Various philosophies of human personality, ethical conduct, and the search for insight in human behavior have struggled to conclude the essentials of anger. It is primarily linked to our depiction of personal and societal order and disorder. Everyone experiences varying level of anger from mild annoyance and irritation to rage. It is a

rejoinder to a perceived risk to self, dearest, and nearest one, property, our self-image, or some part of our individuality. Anger is an alarm that tells us that something is wrong (Novaco, 2009).

Spielberger (1988), described anger as an emotion in which feeling diverges in intensity. Sometimes it may be expressed in form of irritation and at times in form of fury or rage. Clinical anger is a syndrome consisting of various manifestations which varies in intensity from individual to individual (Biaggio & Maiuro, 2002). Clinical Anger may be exhibited in form of many symptoms such as angry about self, wanting to hurt others, anger about failure, anger about present situation, anger about things, anger about the future, annoying others, hostile feelings, shouting at people, irritated now, angry misery, alienating others. More over there might be fatigue as well as social, work, decision, sleep, thinking, appetite and sexual interference. Over all these symptoms may be categorize in two major classes of somatic symptoms as well as affective symptoms (Cox, Stabb, & Bruckner, 1999).

Prevalence of anger in general public is found to 7.8% (n=34000) which was more common among males and young adults and was associated with decreased psychosocial functioning (Okuda, Picazo, & Olfson, 2015). Additionally, the clinical anger can be identified in mental health, prison, educational, and other types of settings to screen for anger symptomatology. In this sense, the CAS may prove to be useful to employ in applied settings where the measurement of clinical anger is deemed necessary and helpful (Sharkin, 1988). The prevalence significantly increased ranging from 35.3% to 73.3% (n=328) in patients with psychological illnesses such as depression and anxiety (Painuly, Grover, Gupta, & Mattoo, 2011), which are very common among people associated with the health care profession such as medical students (70%) (n=142) (Khan, Mahmood, Badshah, Ali, & Jamal, 2006), nursing students (76%) (n=150) and doctors (47.78%) (n=203) (Atif, Khan, Ullah, Shah, & Latif, 2016). Additionally a history of inappropriate, intense, or poorly controlled anger that interferes with work, school, or social relations is found in roughly 1 in 13 U.S. adults. This type of anger was especially

common among men and younger adults, and was associated with high rates of childhood adverse events, a wide range of current psychiatric disorders, and diminished psychosocial functioning (Okuda et al., 2015). However, due to the lack of measures of clinical anger, researchers need to establish the factorial validity of available instruments in other languages and the lack of indigenously validated scale. Perhaps, the prevalence of anger across different groups in Pakistan is an alarming issue that needs to be measured empirically. The absence of adequate measures of clinical anger has been a significant barrier to progress in this area of research. The instrument that was translated and adapted for the purpose of this study.

Objectives
1. To translate Clinical Anger Scale into the Urdu language.
2. To determine language equivalence through cross language validity.
3. To confirm factor structure of Urdu version of CAS.

Method
The study was divided into three phases. The first phase focused on translating the Clinical Anger Scale (CAS). In the second phase, cross-language validation was conducted. The third phase involved establishing the reliability and factor structure of the CAS.

Measure
The researchers developed a self-report questionnaire to measure psychological symptoms related to clinical anger. The instrument consisted of 21 sets of statements, each containing 4 options. Participants were asked to select the statement that best described their feelings from each group. For instance, item 1 presented the following choices: A) "I do not feel angry," B) "I feel angry," C) "I am angry most of the time now," and D) "I am so angry all the time that I can't stand it." The statements within each group varied in symptom intensity, with option "D" representing the most severe clinical anger. Each set of statements was scored on a 4-point Likert scale, where A = 0, B = 1, C = 2, and D = 3. The

total score was calculated by summing the responses, with higher scores indicating greater clinical anger.

Procedure
The Clinical Anger Scale was translated into Urdu following Brislin's (1976) guidelines. Initially, permission to translate and adapt the scale was requested via email from the original authors. The process included adapting and translating the test materials to fit the Pakistani cultural context, facilitating the creation of standardized testing instruments for research purposes.

Phase I: Translation of Perceived Discrimination scale into the Urdu language

Step 1: Forward Translation
In this step, five bilingual experts were consulted for the forward translation of the Clinical Anger Scale from English to Urdu. They were briefed on the study's objectives and the target participants for whom the scale would be used. The experts were instructed to translate the scale items while maintaining cultural equivalence and semantic meaning. Additionally, they were asked to ensure the statements were concise and preserved the original expressions of the items.

Step 2: Committee approach
The forward translation was analyzed to select the best version. The committee, comprising an Assistant Professor and two PhD scholars, reviewed the translations. The primary goal was to choose the most suitable statements considering the age, educational level of the target audience, and cultural relevance.

Step 3: Backward Translation
The final version of the best-selected forward translation from Urdu to English was provided to five independent experts proficient in both languages. These experts were given the same instructions for translation as those in the forward translation process.

Step 4. Committee approach
The committee, consisting of the researcher herself and three bilingual experts (two Ph.D. scholars and a professor), undertook the final selection of items. They compared the translated version with the original measure to identify any variations between the two versions. The review was finalized without any changes, following correspondence via email with the original author.

Phase II: Cross Language Validation
In Phase II, cross-language validation was conducted to check the language equivalency of the English and Urdu versions of the measure using the test-retest method.

Procedure. The researchers sought permission from the department head to collect data for the study. Participants were contacted in groups and informed about the study's aim. After obtaining their consent, they were briefed on anonymity, confidentiality, voluntary participation, and their right to withdraw. Initially, the English version of the Clinical Anger Scale was administered to 50 adolescents, divided into two groups of 25 each. Similarly, the Urdu version of the scale was administered to another two groups of 50 students. The participants were randomly assigned into four equal groups: English-English, Urdu-English, English-Urdu, and Urdu-Urdu.

Figure 1
Diagrammatic Representation of Sample at Two-Time Points for Test-Rest Reliability
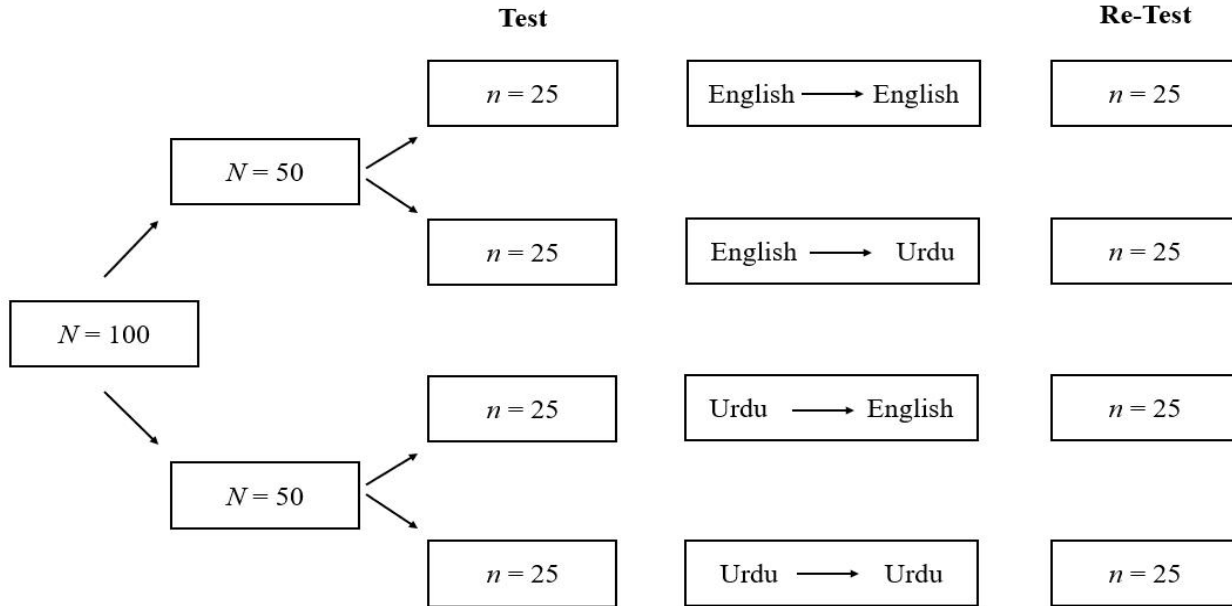
Participants completed the Clinical Anger Scale along with a demographics form. At the second time point, one group of students completed the Urdu version of the Clinical Anger Scale, while another group completed the original version. Similarly, for the other two groups, the third group completed the Urdu version, and the fourth group completed the English version. This procedure aimed to assess the discrepancies and cultural equivalence between the original and translated versions of both scales. These groups were designed to control for any potential learning effects that might arise from completing both Urdu and English retests within a two-week interval. Both versions of the scale required approximately 10 to 15 minutes to complete. Participants were provided with a debriefing and thanked for their cooperation at the conclusion of the study.

Sample. The sample for cross-language validation consisted of 100 adolescents with age (M = 16years) from (men = 43, women = 57). The young adults were proficient in both languages English and Urdu.

Results
To establish the cross-cultural validation of the instrument, the item 21 was dismissed because it was not culturally accepted as it indicated the sexual content at adolescent level and usually not discussed in Pakistani cultural context. Furthermore, in order to establish the test-retest reliability of the scale correlation coefficients were calculated among the results of time one and time two for each of four groups.

Table 1
Test Re-test Reliability of Clinical Anger Scale (N = 100.

Scales	*r*	ICC
Clinical Anger Scale		
English-English	.82**	.81**
English-Urdu	.76**	.73**
Urdu-English	.79**	.79**
Urdu-Urdu	.75**	.74**

*Note: **p≤0.00, ICC = Interclass correlation coefficient*

Table 1 presents results showing high test-retest reliability across all four groups (English-Urdu, Urdu-English, Urdu-Urdu, and English-English). The correlations for the Clinical Anger Scale at both time points are positive and statistically significant, indicating high temporal consistency. Specifically, correlation coefficients range from .75 to .82, with the Urdu-Urdu retest group showing a correlation of r = .75 (p < .01), indicating strong consistency. According to Cicchetti and Sparrow's (1981) criteria, these correlation values suggest excellent levels of ICC test-retest reliability, confirming temporal validity and consistency of scores across the sample. These results provide robust evidence supporting the language equivalence of both the original and translated versions of the CAS. Furthermore, the findings suggest theoretical similarity between the two tests.

Phase III: Structural Validation of CAS Procedure

The data collection utilized proportionate stratified sampling and was collected from daata Guj Bakhsh Lahore. 700 participants within age range of 13 to 19 years were selected from which 100 participants were selected from each age group in which 50 were boys and 50 were girls and overall 350 were girls and 350 were boys. Prior to data collection, participants gave their consent and were informed about anonymity, confidentiality, voluntary participation, and their right to withdraw from the study at any time. Participants were instructed to complete the questionnaires honestly and accurately.

Results

Table 2

Descriptive Statistics of the Sample Characteristics (N = 700)

Variables	f(%)	M(SD)
Age (years)		16.00 (2.00)
Gender		
Men	350(50.0)	
Women	350(50.0)	
Father Alive		
Yes	652(93.1)	
No	48(6.8)	
Mother Alive		
Yes	679(97.00)	
No	21(3.0)	

Note: f=frequency; M=mean; SD=Standard Deviation,

Table 2 shows the frequency percentages of the sample characteristics. Overall, the sample comprised 50% boys and 50% girls with an average age of 16 years and a standard deviation (SD) of 2 years. It was observed that approximately 6.8% of adolescents experienced paternal bereavement, whereas 3% encountered maternal loss.

Table 3

Confirmatory Factor Analysis, Fit Indices for Clinical Anger Scale for Adolescents (N = 700).

Model	χ^2	df	χ^2/df	GFI	CFI	NFI	RMSEA	SRMR
Initial Model	572.80	170	3.36	.92	.87	.90	.08	.09
Model Fit	425.12	168	2.53	.95	.93	.91	.06	.05
$\Delta \chi^2$	147.68*							

Note. GFI= Goodness of fit index, CFI=comparative fit index, NNFI = non-normed fit index; RMSEA=root mean square error of approximation, SRMR=Standardized root means square, $\Delta \chi^2$ = chi-square change.

Confirmatory factor analysis (CFA) was performed using structural equation modeling

(SEM) on Urdu translated version of clinical anger scale. A uni dimensional scale comprised of 20 items with the response rate from 1 to 4. Table 3 indicated the model fit metrics for the evaluated model.

Table 3 presents the fit indices of the clinical anger scale, assessing both absolute and relative model fit. The initial model demonstrated excellent absolute fit with estimations reading as χ^2 (168) = 425.12, p < .05. Typically, the chi-square statistic is influenced by sample size and the number of estimated parameters, prompting consideration of various relative fit indices such as the Goodness of Fit Index (GFI), Cumulative Fit Index (CFI), Normative Fit Index (NFI), Root

Mean Square Approximation Error (RMSEA), and Standardized Root Mean Square (SRMR) (Hair et al., 2010). Guidelines for assessing model fit include a χ^2/df ratio between 0 and 3, RMSEA and SRMR estimates of .08 or less, and CFI, NFI, and GFI estimates of .90 or higher (Hu & Bentler, 1999). However, the initial model did not meet these criteria for relative fit. Modifications were made by introducing covariances across error terms, resulting in improved fit indices: GFI, CFI, and NNFI values of .97, .94, and .93 respectively, and RMSEA and SRMR values of .06 and .05 respectively. Consequently, the modified model met the criteria for excellent model fit.

Figure 2
Confirmatory Factor Analysis of Clinical Anger Scale for Adolescents.
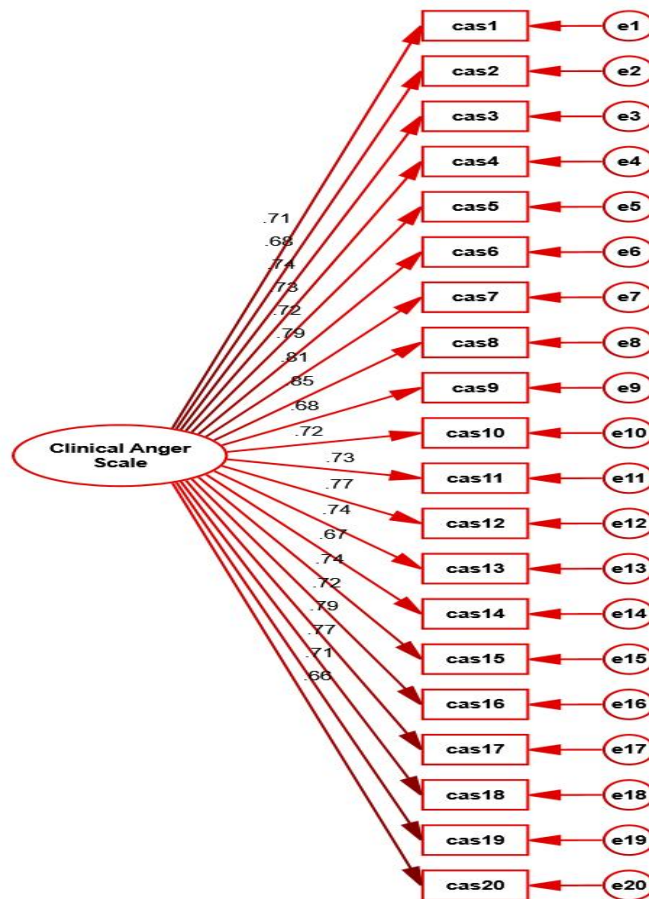
After achieving the stringent criteria of model fit, the factor structure of the clinical anger scale underwent psychometric evaluation, assessing both reliability and validity, specifically convergent validity. It was recommended by the researchers that composite reliability and

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Cronbach's alpha coefficients should exceed .70 to ensure the stability of the factor structure, while the average variance extracted (AVE) should be .50 or greater to indicate satisfactory convergence of measurement (Hair et al., 2010; Henseler et al., 2016). Table 4 presented the variance percentage for clinical anger as 54. Furthermore, reliability coefficients, including composite and Cronbach's alpha, ranged from .88 to .87 respectively. These results collectively indicated the psychometrically sound and reliable nature of the scale.

Table 4

Psychometric Evaluation of Clinical Anger Scale for Adolescents (N = 700).

Items	α	CR	AVE	λ
Clinical Anger	.87	.88	.54	
CAS1				0.71
CAS2				0.68
CAS3				0.74
CAS4				0.73
CAS5				0.72
CAS6				0.79
CAS7				0.81
CAS8				0.85
CAS9				0.68
CAS10				0.72
CAS11				0.73
CAS12				0.77
CAS13				0.74
CAS14				0.67
CAS15				0.74
CAS16				0.72
CAS17				0.79
CAS18				0.77
CAS19				0.71
CAS20				0.66

Note: CR = Composite reliability, AVE = Average variance extracted, λ (lambda) = standardized factor loading

Discussion

The present study aimed to translate, adapt, and cross-culturally validate the Clinical Anger Scale (CAS). The research was conducted in three phases: first, translating the instrument into Urdu; second, validating it through test-retest analysis; and third, structurally validating CAS using confirmatory factor analysis. A sample of 700 adolescents from Pakistan participated in the main study. The scale initially consisted of 21 items without any negatively worded items. Following committee deliberation, one item (item 21) was excluded due to cultural sensitivity, leaving 20 items for subsequent analyses. In summary, the Clinical Anger Scale demonstrated a well-fitting model and good alpha reliability in the current sample. The Urdu-translated version shows promise for widespread use among adolescents. This research contributes to the literature by providing a validated Urdu version of CAS and confirming its factor structure. It also opens avenues for empirical research on anger experiences and cultural dimensions in Pakistan. However, the study is limited by its cross-sectional nature. Future research should include longitudinal studies to better understand the dynamics of anger over time.

The need for a reliable and valid instrument capable of assessing the symptoms of clinical anger led to the present research on the construction and preliminary validation of the Clinical Anger Scale. The Clinical Anger Scale was specifically designed to measure the array of psychological, physiological, affective, cognitive, motoric, and behavioral symptoms constituting clinical anger. Preliminary evidence for the validity of the CAS was demonstrated in a series of analyses showing that clinical anger was related in a systematic and interpretable manner with measures of state anger, trait anger, anger control, and anger expressed inwardly and outwardly. Moreover, other findings revealed that men's and women's feelings of clinical anger were predictably associated with a number of distinct personality characteristics, psychopathological symptoms, and inappropriate as well as problematic interpersonal behaviors.

The reliability and validity findings presented in the present investigation would seem to provide substantial preliminary evidence encouraging the use of the Clinical Anger Scale among both researchers and mental health practitioners. This assessment instrument could, for example, be used in the context of a stress inoculation approach to anger (Novaco, 1975, 1977), research on the interpersonal expression of anger

(Holt,1970; Spielberger et al., 1985), an examination of the role of anger in hypertension and coronary heart disease (Yuen & Kuiper, 1991; Diamond, 1982; Musante, MacDougall, Dembroski, & Costa, 1989; Spielberger et al., 1985), therapeutic work concerned with violent behavior (Rothenberg, 1971), the therapeutic treatment of clinical anger(Deffenbacher, McNamara, Stark, & Sabadell, 1990; Deffenbacher, Story, Start, Hogg,& Brandon, 1987; Hazaleus & Deffenbacher, 1986), and the study of gender-related aggressiveness and anger (Frodi, Macaulay, & Thome, 1977; Smith, Ulch, Cameron,Cumberland, Musgrave & Tremblay, 1989).

In addition, the Clinical Anger Scale provides a way for studying the role of clinical anger among both clients and non-clients (Rubin, 1986; Tavris, 1982). In clinical settings, the CAS could provide information helpful in understanding angry clients, the planning of treatment, and the assessment of therapeutic progress. Client scores on the CAS could, for example, be compared with non-clinical groups (or against CAS norms, once they are established). By being administered at several points in time, the Clinical Anger Scale may also provide valuable information about clinical status and treatment response. Moreover, in non-clinical settings, the CAS may prove useful in identifying individuals who have "clinical" levels of anger or those who at risk for developing clinical anger. Additionally, the CAS can be easily administered in mental health, prison, educational, and other types of settings to screen for anger symptomatology.

In this sense, the CAS may prove to be useful to employ in applied settings where the measurement of clinical anger is deemed necessary and helpful (Sharkin, 1988).An important caveat is in order here. It is vital to make the distinction between the assessment of the severity of clinical anger symptomatology and any formal diagnosis of clinical anger. Nonetheless, although the CAS was not designed to yield a diagnosis, it may nonetheless provide a standardized assessment of the severity of symptomatology which is clinically relevant to anger. The present research represents an initial step toward the study of these and other important topics associated with clinical anger.

Limitations
The current study has following limitations:

• The sample size used in this study may not be large enough to generalize the findings to the entire Urdu-speaking population. Only adolescents from urban areas were selected in this research.

• While efforts were made to ensure the cross-language validation of the Clinical Anger Scale, there may still be subtle differences in how anger is perceived and expressed across cultures in different province of Pakistan, which could impact the reliability and validity of the scale.

• Study focused on a specific age group, the findings might not be applicable to other age groups.

Future Recommendations
Current study has following recommendation:

• Future research should aim to include larger and more diverse samples, including participants from various socio-economic backgrounds and different regions where Urdu is spoken, to enhance the generalizability of the findings.

• Although the study aimed to establish the psychometric properties of the Urdu version of the Clinical Anger Scale, additional research is needed to confirm its long-term stability and sensitivity to change.

Implications

• The successful translation and validation of the Clinical Anger Scale into Urdu provide clinicians with a reliable and culturally appropriate tool for assessing anger in Urdu-speaking patients. This can improve the accuracy of diagnoses and the effectiveness of treatment plans tailored to the linguistic and cultural context of the patients.

• This study contributes to the field of cross-cultural psychology by providing a validated instrument for measuring anger in a non-Western context. It enables comparative studies across different cultures and languages,

enriching the understanding of how anger manifests and is experienced globally.

- In educational settings, the Urdu version of the Clinical Anger Scale can be used to identify students who may need psychological support for anger-related issues, facilitating early intervention and support within schools and universities.

Conclusion

This study successfully translated, adapted, and validated the Clinical Anger Scale for use in Urdu-speaking populations. The rigorous process of translation and cross-language validation ensured that the scale is both linguistically and culturally appropriate. The findings indicate that the Urdu version of the Clinical Anger Scale has satisfactory psychometric properties, making it a reliable tool for assessing anger in various settings. The implications of this study are far-reaching, offering valuable resources for clinicians, researchers, educators, and policymakers. By providing a validated instrument, this research facilitates better understanding and management of anger in Urdu-speaking communities, ultimately contributing to improved mental health outcomes. Future studies are encouraged to build on this work by exploring the scale's applicability in different contexts and further validating its psychometric properties. In conclusion, the Urdu version of the Clinical Anger Scale is a significant contribution to the field of psychological assessment, promoting culturally sensitive approaches to mental health care and research. This work underscores the importance of adapting psychological tools to diverse linguistic and cultural contexts, ensuring that mental health services are accessible and effective for all populations.

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